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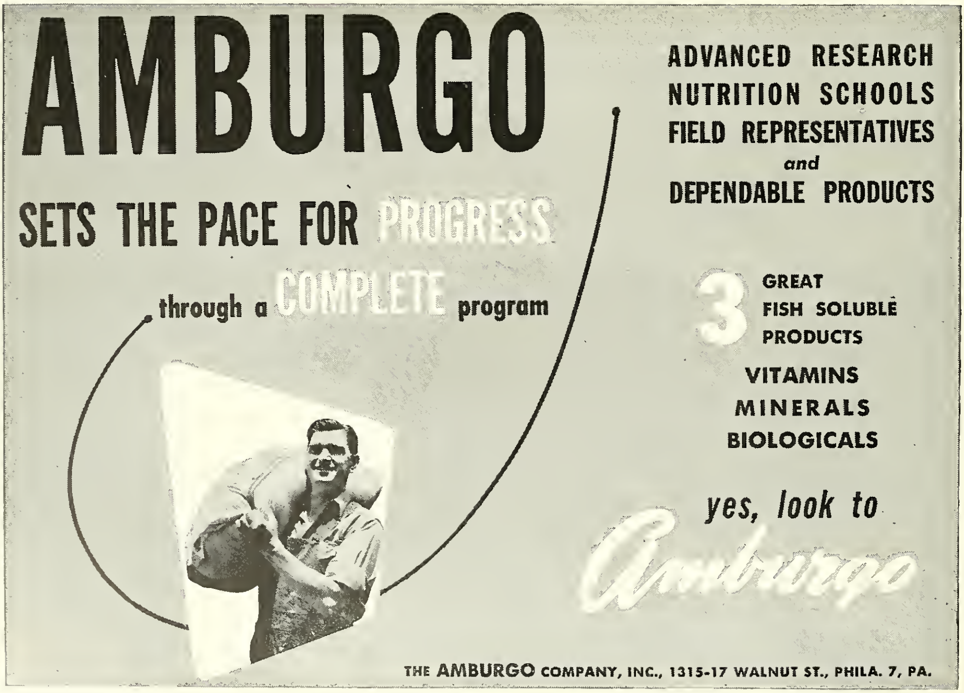

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Gleaner

NATIONAL AGRICULTURAL COLLEGE

Farm School, Bucks County, Pennsylvania

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ON THE COVER: Corn Field in Autumn. Photo by Marvin Adleman.

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Editorial

THE CONSERVATION QUESTION

By David Ezickson '57

For the past 20 years the United States government has been under the control of the Democratic administration. While they were in power one of the most important problems facing them was the conservation of the nation's natural resources.

In January 1953, the Republican party took over the helm. One of the main issues between parties was a conservation question. To be exact the coastal state's title to submerged off shore oil, and the development of hydro-electric power by private enterprise.

Should the construction of these dams and the profits from them fall into private hands? This question is a difficult one to answer. Critics of the government's program say they don't benefit from the lands under the government ownership. This is definitely wrong due to the fact that government conservation programs prevent floods, produce power, and in general, bring the standard of living to a higher level. Another individual says that this government ownership is a sign of "creeping socialism" and the government should turn the problem of natural resources to private hands. This brings up an interesting problem: Is a privately owned concern ready to finance the construction of dams for purpose of flood control, irrigation and hydro-electric power? To give an example, the government has appropriated nearly 60 billion dollars for the construction of Dams. What private company could furnish such capital? Even if one could, it is not likely that a private company would provide the added cost for the construction of multiputpose dams as does the government. The private investors would want the quickest possible return on their investment which is quite natural. In the whole overall situation the amount of our taxes that help finance this program is infinitesimal.

Let us turn to another broad area of conservation, public lands. There is constant pressure being exerted on the government to turn these lands over to private ownership. However, the cattlemen use this land for their cattle. The thing which the government objects to is a probable destruction of watershed areas and erosion of the land. In 1947 the cattlemen's association attempted to buy these lands, but the conservation block was strong enough to prevent the selling of the land.

Earlier, I mentioned the oil offshore, better known as the tidelands oil. This oil is, and was, a very hotly contested issue. Who should own the oil on our continental shelf? President Eisenhower is of the opinion that the oil should be controlled by the state. When Mr. Truman was President, he had a bill passed stating that "the continental shelf (the shoreline which extends out to sea, an average of 20 miles) was subject to the jurisdiction of the United States." The Supreme Court upheld the constitutionality of this bill. The present law contradicts and changes this completely. The present law has not been tested, although the state of Arkansas filed legal action to void the states of such power. Ask yourself this question: why should 20 states who are on the coast be allowed the privileges of this oil which is worth an estimated 300 billion dollars, and the other 28 states gain nothing? In addition, if the oil is turned over to the state, the companies with the most capital could apply for the largest portion, leaving smaller companies with nothing. One great factor which all of us should keep in mind is the preservation of our natural resources for future use.

This will be essential for the continuance of economic progress as we know it.

* * *

GLEANER CHANGES HANDS

Commencing with this, the November issue, the Gleaner will show certain changes in both staff and policy. Our new editor is Morton Hershman; the managing editor is Harry Conover; and the associate editors are Marvin Adleman, Albert Rosner, and Howard Gordon. Photography will be handled by Marvin Adleman; our art work will be done by Carl Bornfriend; and sports will be handled by Steve Ferdo.

Every steady reader of the Gleaner will immediately notice our change in policy. The new Gleaner will contain more fiction, and more current news.

Although the new staff will put out a magazine containing agricultural articles we want to "break away" from the old policy of complete agriculture and make the magazine one of general interest to everyone, be he farmer or urbanite.

FILTH
In Our Foods

By Howard Gordon '56

This report is a resume of a series of three articles by Howard Whitman, which appeared in the May, June, and July, 1952 issues of Redbook Magazine. These articles are based on a year's research of food market conditions.

The wholesale food markets of America operate at night and early morning. Furthermore, the markets are located in the oldest, most decrepit parts of the cities. It is for these two reasons that Mr. Average American seldom, if ever, sees the markets in action. If he did see the market in his town, he undoubtedly would not tolerate it; he would force the wholesalers to change the market and keep it sanitary.

Mr. Whitman, accompanied by Federal Food and Drug Inspector, John Guill, visited the produce center known as "Market Place" in Baltimore. Here is, in part, what happened on this visit. A merchant, pointing to his rows of produce covering the sidewalk and stretching twelve feet into the street, said, "This is my show window. I couldn't do a thing without the sidewalk." This man had, in fact, rented an extra store front just to get the sidewalk rights and the more important street rights which went with it. He told how he and others pay the city of Baltimore an annual franchise fee for use of the sidewalk.

"The sidewalk . . . During the very moments I spoke with him, one of his porters carried a basket of turnip tops from the street and plopped it on the sidewalk that had gutter water still dripping from it and the porter himself expectorated a stream of tobacco juice which stained a lettuce crate. A dog filthied the sidewalk, and a moment later a basket of spinnach was set down on the spot. The porters and merchants hurried back and forth carrying on their shoes animal wastes from the pet shop next door, tracking it upon the sidewalk — the ice box and show window of this food market."

"Around the corner, a fruit wholesaler complained of the stench of the chicken houses with their primative methods of scalding and plucking. One hot day the stench was so bad that he was actively sick three times and his bookkeeper threatened to quit, the fruit man said. Worse at least for the customers were the poultry droppings and the other wastes which came floating down the adjacent alley to bathe fruit in its open crates."

"Before leaving Camden Street, Guill and I picked up two honeydew melons to take back to the Federal Food and Drug laboratory. One melon bore the unmistakable signs of rat gnawing; the other looked perfectly good to the eye, but had been in a crate just below the gnawed melon. We wanted to see just what each sample would show under the microscope."

"Chief Chemist Edward Hoshall took both melons into a darkroom and examined them under filtered ultraviolet light. He found rat footprints on the good melon, rat urine on the gnawed one."

"He then turned the samples over to analyst Shirley Walden. She first washed the melons in alcohol, filtered out the residue, and examined it under the microscope. Only soot was found on the good melon. On the gnawed melon — two mites, one dead fruit fly, thirty-three maggots, and one rodent hair.

"Next, analyst Walden made cuttings from both melons. She boiled them in dilute alcohol, then put the broth in a Wildman Trap Flask and isolated whatever foreign matter the cuttings might contain. This went into petri dishes, and again under the microscope. The good melon showed nothing. The gnawed melon showed, first, a rat hair. Then Miss Walden hesitated as she started to write the next entry on the test record.

" 'This I don't quite understand,' as she took her eyes from the microscope. 'But I'll have to put it down anyway.'

"She wrote: Two feather fragments.

"Guill and I understood all right. Remember those chicken houses and the filthy alley? Brother rat had been around.

As long as market places remain slums, laboratories like this one in Baltimore will have plenty of business. I riffled through some of the test records:

Rodent hairs and insect filth on pickles.

Bug larvae in spices.

Horse excreta in cheeses.

Human urine on coffee beans.

Rat urine and excreta in salt.

After Baltimore, Mr. Whitman went to New York's Washington Market. This market feeds one tenth of the country and is sometimes called "America's Kitchen".

Accompanied by Federal Food and Drug Inspector, John Zaic, Mr. Whitman reported the following:

"Zaic and I, as we made our rounds, carried with us standard sterile flasks to collect samples for testing. Here is what we brought back to the Food and Drug Administration laboratory on Varick Street."

"In the heart of the market, at Washington and Reade Streets, we saw a porter repacking a crate of carrots which had been on display, setting bunches of them in the watery refuse on the sidewalk as he worked. Into flask one we scooped a sample of the refuse water. Into flask two went cuttings of the carrots.

"At Jay and West Streets we saw a porter loading green peppers into a truck. One basket spilled over the cobblestone street, and the peppers rolled through rivulets of gutter water near the curb. Nothing daunted, the porter was gathering them up and putting them back in the basket when we came along. We took a sample of the gutter water for Flask three and put cuttings of the peppers in flask four.

"At Reade and West Streets we saw a horse and wagon peddler loading up for the day's neighborhood sales. I stood by and watched him pile his oranges in a pyramid upon the wagon. Several oranges dropped off the pile and fell into the gutter slop at the curb. The peddler simply picked them up and

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MAN'S LAST CHANCE

By Ronald Stammel '56

"You must believe me, doctor," I shouted, "No one else will."

I was in a small white room in the Army hospital at Washington, D. C. I had been missing in action for seven years on a routine bombing mission over Iwo Jima. Last week I was picked up by a small fishing boat after having floated in the Pacific Ocean for more than four weeks. Nearly dead from hunger and exposure I was brought here to tell my story, but no one will believe me. They all think I'm crazy. The white-coated psychiatrist seated beside my bed is my last hope to warn mankind of what is in store for them; to warn them of the danger that is nearly at hand.

"Take it easy, son," he said quietly, "You've been through quite an ordeal. Now start at the beginning and tell me the whole story."

"Well it all started on the day of that raid. We had just finished our bomb run and were leaving the target when a burst of flak got our right engine. I told my two man crew, Sargeant Tom Campbell and Lieutenant Ed Wills to prepare for anything."

"We limped along for about a hundred miles when our left engine also gave out. As we dropped beneath the clouds a welcome sight met our eyes. There below us was, what appeared to be, an uninhabited island about a mile and a half wide, with a broad strip of beach on the south side. The beach was what I headed for and was lucky enough to land without turning the ship over in the soft sand."

"We got out of the plane and started to explore the island but we didn't get twenty feet from the ship before a man came out of the jungle and walked toward us."

" 'Good morning, Gentlemen,' he sand pleasantly, 'welcome to our island. My name is Doctor Wilson.' "

"When we had made ourselves known to him he said, 'You must be hungry, follow me.' "

"We started up the path after him but I couldn't help feeling that something was wrong and Tom shared my feelings for he whispered, 'I got a good look at this island when we came in and there were no signs of anyone living here."

"Just then we stopped before a large rock and at the touch of a hidden button a portion of the rock swung away revealing an elevator going into the ground."

"Dr. Wilson motioned for us to enter but by now I was really scared and lunged at the doctor. Before I could move two steps I was paralyzed by a beam of light from a pencil-like tube he held in his hand. I know it sounds fantastic but I couldn't move a muscle."

"He called some other men and they lifted me and carried me into the elevator. From what I could hear I guessed the same thing happened to Ed and Tom.

" 'Be careful,' said the doctor gently, 'don't hurt them, the poor little things.' "

"We descended a few hundred feet until the car stopped in a huge building where I was placed in a small room and was laid on a bed to fall into a troubled sleep."

"When I awoke in the morning, the effects of the light from the doctor's pencil had worn off and I surveyed my prison. There wasn't a window in the room, yet a strange light seemed to be coming out of the walls. At the realization of these things, fear gripped me and I rushed to the door and began to beat upon it and shout for Tom and Ed. I heard a noise behind me and turned just in time to see Doctor Wilson step through the wall!"

"I was too startled to move or speak. " 'Don't be afraid.' He said quietly, I know what you're thinking but we won't hurt you.' "

" 'Who's we?' I questioned."

" 'We are a race of much superior intelligence to the humans of the outer world. Your most difficult chemistry and physics are our A B C's"

" 'What is your purpose?' I asked."

" 'To take over the world and run it so there will be no trouble, war, and diseases. Don't worry we will be kind.' "

"Not feeling afraid anymore I asked, 'When is this invasion to start?' "

" 'It started years ago.' he replied, 'Already our men hold important positions in your government. The time will soon be here.' "

"In the months that followed I was allowed to go everywhere with Doctor Wilson and I learned that there were about two hundred like me in their massive subterranean city. We were treated very kind for we were their pets."

"As I listened to the doctor tell me of the super intelligence of his race, of their plans to take over the world, and that men of his race already held positions such as doctors, lawyers, businessmen, and politicians, one thing became clear in my mind and that was, I must escape to warn the world of the coming danger. But how?"

"One day Doctor Wilson told me he must leave to take his place in the outer world. This was my chance, my last chance, to escape."

"With all their intelligence they had one weakness and that was kindness, even their weapons did not kill, just paralyze. I asked Doctor Wilson to take me back to the plane to get a picture of my family for when he left I would be very lonely."

"He said he would take me so I was hoping against hope that the life raft had not rotted."

"When we got to the plane I went inside and got a wrench and made my way back to Doctor Wilson, who was looking out to sea. I crept up behind him and hit him with the wrench as hard as I could: I only hope I didn't hurt him for he had been good to me."

"Fortunately the life raft was still in good condition. Hurriedly I inflated it and pushed out to sea. I floated for what seemed years until that boat picked me up and you know the rest."

"That's a very amazing story, captain" the man seated beside me said finally.

"But you don't believe me," I screamed, "You're just like the rest."

"We'll see," he said reassuringly, "Now just try to get some rest."

The doctor leaves and walks down the hall and goes through a door marked "General Dixon". As he enters the man behind the desk rises.

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PERSONALITIES OF THE FELINE FAMILY

By George Demitroff '54

The personalities of wild animals differ from individual to individual as well as from species to species. The present home, original environment, heredity, present care, and the personal traits of the animal all play an important part in shaping the animal's personality.

When we enter the Carnivora house of the Philadelphia Zoo, the first animal we see is naturally the king of beasts, the lion. In the first cage is a lioness about eight years old who was born in the zoo. Dorothy has never met any males of the species socially and she acts like an old maid. She can spot a keeper a mile away or among a thousand people and will never take her eye off him until he is out of sight. Dorothy likes to be scratched on her back and head while she stretches and gives out a booming purr just as any member of the cat family. Once in a while she goes after your hand with her paw, playfully of course, but with a force that would probably shatter your digits.

The next three cages contain Simba, Tarzan, and Pharoh, who were brought from Africa as cubs. After trying to touch any of these beasts people will address you as "Lefty." These males have never been bred to a lioness and have been in each other's company since birth. Simba is the one who is considered boss of the trio and is the only one who has a mane that is not overgrown, which gives him the appearance of a real jungle lion. He cannot be moved from cage to cage or out into the yard by using the high pressure water hoses under the cages. He moves strictly of his own volition, while Pharoh and Tarzan are easily coaxed into anything. An incident I witnessed typifying Simba's contempt for authority came about one day after feeding. A keeper tried shouting at him to move him to the next cage so that his cage could be cleaned. Simba nonchalantly turned his back to the enthusiastic keeper and to my amusement and the crowd's, urinated on his clean uniform. He then strolled casually away, leaving a red faced and angered keeper.

The ocelots and margays are housed in the next section of the house. They make excellent pets if raised as such from birth.

One day a lady came to the zoo with a black doctor's bag which contained a male ocelot. She pulled it out, stroked it and adjusted its billed collar. It was donated to the zoo but as soon as its owner left it reverted to its wild state. It can be seen now with the green billed collar. That is the only sign that it was ever tame.

Kitzen and Jezebel are two of the black leopardesses born in captivity in the zoo. Both animals are of a nervous temperament which is typical of leopards. Each answers to her name, but they differ in character. Jezebel is innocent but excitable and Kitzen is calmer but sneaky and fast as a whip. I have petted and played with these animals and you can still see a slight indentation on my forearm from a scratch I received from Kitzen. Several attempts have been made to mate the male spotted leopard to Kitzen, but each time she's in heat she will back against the wall and lash out at the male, driving him from the cage.

The two black leopards that were jungle born are particularly vicious and always have their mouths twisted in a snarl exposing their teeth. When moving these two animals from one cage to another they will charge and lash at the keepers, who have to be fast and cautious.

The snow leopard "Prince Icor" who is really a she (the Curator of mammals made a mistake in sexing her) is the most valuable carnivorous animal at the zoo. It seems as if the prince knows she's valuable and refuses to eat the peasant's fare, horsemeat. She has to be fed chickens and quality cuts of meat. In my opinion the snow leopard, which incidentally is not even a near relative to the leopard family, is the most beautiful of the cats.

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Author and Pet in a Playful Mood

AGRICULTURE IN IRAN

By M. Shirvani

When we compare Iran with other countries of the same size, we note that she is one of the very few or perhaps the only country that has a variety of climatic conditions suitable for any kind of agriculture. Iran's natural resources are basically similar to those of the United States. Therefore agriculture in Iran can exist in a smaller scale than it does in the United States.

If political circumstances give us the opportunity to improve our agricultural industry, we will not only be able to supply our own food needs, but we will also be able to export a large amount of food to foreign countries.

In order to visualize these points, let us become familiar with Iran's natural geographic situation.

There are a great many mountain chains that extend from northeast to northwest Iran. These run out of Iran to form the Himalayas (the largest mountains in the world). Approximately one-seventh of all the mountains inside Iran are covered with forest and one-fifth is covered with pasture. There is some farm land in between the mountains that is in production. One fifth of our twenty million people are nomads and live in these mountains. These people have always lived with spring weather, green grass, and colorful flowers by moving from the south to the north and from the north to the south.

The nomads form different groups and each group has a particular characteristic and special costume and language. They make their living by raising cattle, sheep, and horses.

Although Iran, as she is, cannot be called an agricultural country (she does not have enough water at the proper time), three fourths of our people work at farming.

The mountains are bounded on the north by the Caspian Sea and on the south by Iran's central flats.

The north boundary of these mountains is covered with forests and the south boundary is free from forests. The tops of all these mountains are white with snow most of the year. There is a conical shaped mountain that is called Damavand and it is covered with snow all the time.

The weather in these mountain areas is generally cold, but the interesting thing that the farmers grow there is a strange variety of citrus fruit. They also grow cotton and tea in this farming region.

Besides these northern mountain areas there are some mountain chains that start at the northeast. However they extend to the south.

We grow all types of crops and legumes in Iran. The main ones are wheat, barley, cotton and spersial plant that is plentiful in Iran. We also raise Ceffrass from which we make a product known as clout which is smooth as silk. Producing silk and silk worms is an important occupation in Iran.

We have many kinds of fruit such as apricots, plums, cherries, pears, peaches, and apples. The special fruits that are very common in Iran are figs, and grapes from which famous wines are made.

This has been a very brief summary of Iran's agricultural conditions.

HYDROPONICS

By Pinya Cohen '57

During the past few years the science of hydroponics has become a prominent and practical method of growing plants. In simple terms, the method of hydroponics may be defined as plant growth without the use of soil. The nutrients necessary for plant growth are artificially supplied in solution and soil culture is disregarded.

Several methods are used in hydroponics, however, they are basically the same with certain variations. One method used is to fill the greenhouse benches with clean sand instead of soil. The nutrients required for growth are supplied by mixing the necessary chemicals in a tank and applying these nutrients by means of a hose. The plants are fed several times a week and between feeding periods the sand is kept moist with water. Every few weeks the sand is thoroughly cleaned to remove accumulated chemicals. Disadvantages of this method are that valuable chemicals are lost by cleaning the sand and that the sand must be kept free from too much acid. The acidity of the nutrient is extremely important. The other methods vary in physical apparatus, the use of cinders instead of sand and more or less elaborate methods.

There are a number of commercial advantages in the method of hydroponics. One of the main factors is that the whole operation is much cheaper, because the plants are fed only those elements which they need for proper growth and are not fed unnecessary minerals, therefore virtually no waste of water and fertilizer.

Another factor to consider among the commercial advantages is that the expense of labor is cut tremendously. Manual labor needed for watering is eliminated. as the water and the nutrient solutions are fed to the plants by the same apparatus. Water damage is practically eliminated and soil acids no longer cause trouble with greenhouse benches and other constructions. One of the larger expenses in a conventional greenhouse; the soil expense and the labor, time, and fertilizer necessary to produce satisfactory soil is completely eliminated in the method of hydroponics. The method of soiless culture also produces a greater and finer crop yield that sells for a better price.

Perhaps in the near future, the science of hydroponics will become more widely used and appreciated as its disadvantages are few and the savings in time, labor and equipment are great.

The Research Laboratory

By Karl Barth '56

Dr. Schatz, Laboratory Director, Examining Bacterins

In the fall of last year the National Agricultural College established a research laboratory and engaged Dr. Albert Schatz to head this new department. There are various reasons which motivated the establishment of this laboratory. Students who are interested in Agricultural Research may obtain practical experience in research work. It offers facilities for those faculty members who wish to work on original research in their own fields. The research laboratory will also enable the college to give advice and aid to those in agriculture and related fields.

The lab is now fully equipped for investigative work on various problems in the broad field of agriculture, industry, and public health. More specifically, it can handle studies of chemical, biochemical, physiological and microbiological nature, which studies are all part or closely related to the vast and ever-growing field of agriculture.

The building which houses the Research Laboratory is one of the oldest in this area. It is located on the old highway running parallel to Route 202 between Helker's Garage and our Alumni House, and dates back almost 200 years when it had been a roadside inn. It was the farmhouse of Farm #1, and was later used as living quarters by students and members of the faculty.

In order to make the old building suitable to house the Research Laboratory a large amount of time and funds had to be spent. It received a new roof and one side was ripped down and rebuilt. It is common knowledge that laboratory instruments and equipment are quite costly. To keep the laboratory staff working at full efficiency hundreds of test tubes, Erlenmeyer flasks, Florence flasks, petri dishes and other precision glassware of all types are needed. The successful solution of problems arising in all fields of agriculture also necessitated a large stock of organic and inorganic chemicals, which illustrates the great expense to which the college has gone in the establishment of the research laboratory.

Dr. Schatz, who is recognized as one of the discoverers of the antibiotic streptomycin, is one of the outstanding scientists in the United States. He directs all research in the lab and in this function advises and assists faculty members as well as students in pursuing original investigative work in whatever field of agriculture or related fields they might have chosen. Through his own research work Dr. Schatz, with the assistance of Mr. Gilbert Trelawny, has already been able to secure two grants from the companies interested in the laboratory. He currently teaches courses in Agricultural Research, Animal Bacteriology and Parasitology to qualified juniors and seniors.

Dr. Max Trumper is Chairman of the Research Committee of the Board of Trustees. President James Work is also a member of the committee. Dr. Trumper is an outstanding Toxicologist and Physiologist and is known to most students through his lectures on nutrition.

Mr. Gilbert S. Trelawny is Dr. Schatz's assistant. He has had six years of practical research experience in a clinical laboratory, two of which were spent in the U. S. Army. Although Gil Trelawny had ample experience he felt that he needed a theoretical background and therefore enrolled this year as a freshman at N.A.C.

Dr. Elson is one of the faculty members conducting research work at the lab. Many students may be interested in this work so we have obtained an account of one of his research problems. The nature of his problem is as follows: Liming and fertilizing soils results into things which are desirable in one way, but undesirable in another way. The application of lime raises the PH of the soil, and application of fertilizer supplies phosphate to the soil, which of course, is desirable. However, plants, as well as all living things, require trace metals, like zinc, molybdenum, copper, iron, cobalt, manganese etc. The trace metals which are so vital for high yields become more insoluble, and therefore more unavailable for plant growth, as

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The Story of HAM

By Kurt Sonneborn '55

FROM Tokyo to Berlin, from Iceland to Africa, wherever American soldiers are stationed, American business men have traveled; whether in search of security, business or fun, the Yankee dish of Ham and Eggs has become synonymous with the "American way of life."

This was made possible by Hernando DeSoto, businessman, tourist, and soldier of fortune, who introduced his Majesty, the Pig, to the shores of the New World in the year 1539, one hundred years before the English settlements of Plymouth and Jamestown were founded. The Indians, who were not familiar with the art of domesticating animals, hunted the hogs that were running wild and found them to be very tasty. As a matter of fact it is claimed that the Indians introduced spareribs to the Puritans. The art of preparing pork had come a long way since the primitive operations of the Indians and the colonial settlers.

Today, smoked, dried or spiced, the pig supplies us with over two thousand delicacies. In spite of the vast array of varieties, the blue ribbon favorite is, as it has been for centuries, ham. Ham comes from hogs whose life purpose seems to be that of eating. When raised on the vast scale that is practiced in the U. S., fattening of hogs becomes a scientific business. The pig's diet consists of corn. It takes thirteen bushels to increase the weight of a hog by one hundred pounds. Since the optimum weight of a marketable hog is 225 lbs., a hog must devour approximately 1,600 lbs. (26 bu.) of corn. A pig of about six months supplies us with the choicest of cuts, but only the two hind legs supply us with ham. The other parts going into bacon, pork chops, spare ribs, etc.

In processing hams the old fashioned dry-cure, and the pickle-cure methods are in wide use today. Salt is the principal ingredient in the dry-cure method, while a mixture of salt and sugar are used in sweet-pickle curing. The ingredients are either applied by rubbing the salt into the ham, or as is done most frequently today, are injected. In the next step the hams are "overhauled" to insure uniformity in curing. This means that hams are placed into vats and are covered with a curing solution. After they have been in a particular vat for a certain length of time they are taken to another vat containing a similar solution. The secret of a well cured ham lies in the amount of different curing ingredients used, and the manner in which these are applied.

No method is known that exceeds the old fashioned smokehouse for bringing out the fine flavor and taste.

The giant packing houses are equipped with smokehouses that are electrically controlled so that the right amount of moisture and smoke are produced; the basic idea behind it all is to expose the ham to the fragrance of burning hard wood. When the desired degree of heat has been reached the ham is removed from the smokehouse and placed in the hanging room for cooling and final inspection. The exact techniques applied in the processing of ham are numerous, however, the details are heavily guarded secrets.

Since DeSoto stepped ashore to take possession of the New World in the name of his majesty, Charles I of Spain, the basic processes in the preparation of ham for table use have not been changed. The empire he helped build has vanished, yet I hope that the call "Ham and Eggs coming up" will stay with us forever.

PERSONALITIES OF THE FELINE FAMILY

(continued from page 7)

Chew is one of the biggest jaguars in captivity, weighing over 400 pounds. He is a vicious killer and is always ready to pounce on anything that moves. A keeper once made the mistake of opening the dividing door between Chaw and a pair of young jaguars. He was in the other cage like a flash, grabbed one of the jaguars, and broke its head as though it were an egg shell. The only reason the other jaguar was saved was the fact that Chaw had an iron grip on the dead one and refused to let go, giving enough time for the surviving one to move into another cage.

The surviving jaguar was Rose, who besides being a very lucky cat was my favorite animal. Rose was born in captivity and is about four years old. She has a very gracious and trustworthy personality. She was the only animal in that house I trusted completely. I would stop by her cage on a warm summer day and give her a shower which she enjoyed immensely. Jaguars are excellent swimmers. She showed her appreciation by purring like a kitten. I would then brush the water from her and get her moving by wrestling with her. Sometimes she would hold me with her paws and get my face all wet by licking me with her sand-paper like tongue. A lady once threw a souvenir book that was made of paper maché into Rose's cage and before anyone could get it out, poor trusting Rose swallowed it. We were lucky because everything came out alright, but it sometimes makes you wonder who belongs in the cages, the animals or the spectators.

There exists in animals, like jaguars and panthers, a condition known as melanism, which is the opposite of albinism. This is very prevalent in panthers from Malaya. Hence a pair of spotted leopards can very easily have a brood of black panthers. If one looks closely at the black panthers he can see the darker spots in the background. These cats are faster and more dangerous than their spotted brothers because of their lack of camouflage. The blackness in the luxurious jungle makes this leopard stand out like a sore thumb and this animal has to depend on speed and risk in getting its prey. At the end of

(continued on page 16)

SPORTS

Philosophy of the Game

This is a reprint of the speech given by Prof. Schmieder at the Pep Rally preceding the first game of the 1953 football season. These spoken words have meaning for any competitive undertaking and every contestant can realize the essence of the words.

—Sports Editor

LEARN to obey before you command. Today, tonight, tomorrow, the great command, the big order, goes out to you, "Beat Wilson."

However, as this order, this pleading, this beseeching, goes out to you stalwarts, here, from all of us here at our college on the banks of the Neshaminy—you dare not fail to remember that today, tonight, tomorrow, the great command goes out to the other stalwarts to the west of us on the banks of the Potomac, the great command, "Beat the National Aggies."

A little fear, a little trepidation of uncertainty is in your hearts. That is quite alright. A little fear will put you more on the "qui vive"—on the alert, will make you throw off any nonchalance, any overconfidence which may after be disastrous. A little trepidation will shoot the adrenalin into your blood stream and tone up and steel your muscles to enduring, efficient action.

But yes, I know it is not as simple as all that—courage and will to win, the never say down or die will not always do it—nor buckets of blood and cries of "fighting hearts we can't be beat." Shouting and noise may have toppled the walls of ancient Jericho, I would not know, I was not there. But I believe it helps.

You players of the game know all too well that it is not as simple as that—for there comes into play multitudinous other factors—unforseen, blocking of careful plays, vicious tackling, lack of interference, balking and perhaps some deceptive tricks. There, then as I see it, comes into play the unscheduled action of the individual, his knowledge of the game, his past experience, his judgment, his stamina and what not that was learned during tough weeks of scrimmage and countless other football games. But, always over and above all the hard, fast struggle and fast thinking stands the purpose to carry out the great and subconsciously always present to the last—then win or lose—it can be truly said "Remenisse juvalilt"—it will give you pleasure—"jivalit"—it will give you joy to remember, to recall the great game, the great games, of the 1953 football season.

Yes, we are assembled here this evening to let you know that we are with you at this eve of the football season, and shall stay with you to the end.

When you win we will raise you high on our shoulders in joyous triumph, if you lose we shall weep with you and help bind your wounds of body and soul. But for goodness sake win.

The fundamental psychology of man is today about the same that it was in the days of Aevens the prince Aevens, the Trojan hero of 3000 years ago. In order to encourage his men enduring almost unbearable hardships he concluded his pep talk with—

"Forsau et bace olein, Remenisse juvaleit."

Perhaps at some time it will give you pleasure to recall these hardships.

SOPHOMORES WIN TUG OF WAR

For the first time in three years, the sophomores pulled the freshmen across the now depleted 'mud hole' in a spectacular tug of war which lasted more than five minutes.

Even before the battle got under way, there was a great deal of excitement as a concrete wall collapsed sending several students sprawling over an embankment.

The rope broke as the great tug started but Mr. Feldstein saved the day with a new one, and after a breath-taking five minutes in which the struggle could have gone either way, the freshmen weakened and went splashing through the mud. They had a chance to clean-off however, as the sophomores watered them down with a pressure hose.

HIJACKED HUMOR

By Bub Jaggard '54

The mistress of the boarding house glanced grimly around the table as she announced: "We have a delicious rabbit for dinner."

The boarders nodded resignedly, all that is but one. He glanced nervously downward. One foot struck something soft, something that said "Meow."

Up came his head. A relieved smile crossed his face as he gasped, "Thank God."

* * *

Country Constable—"Pardon, miss, but swimming is not allowed in the lake."

City Flapper—"Why didn't you tell me before I undressed?"

Constable—"Well, there ain't no law against undressing."

— *Fla. College Farmer*

* * *

"I'll teach you to make love to my daughter!"

"I wish you would, sir. I'm not making much progress."

* * *

Sign in a cocktail lounge: Please don't stand while the room is in motion.

* * *

"Have you ever awakened with a jerk?"

"Heavens, no! I'm not even married."

* * *

"What was the hardest thing you learned at college?" asked the proud father.

"How to open beer bottles with a quarter," said the son.

* * *

Wife: "Who was the dame you were talking to?"

Husband: "Just a woman I met professionally."

Wife: "Yes, but whose profession—yours or hers?"

* * *

Husband: "The iceman's been bragging that he's kissed every woman in this apartment house, except one."

Wife: "Must be that snooty Mrs. Jones upstairs."

* * *

Diamonds don't grow on trees, but the right kind of limbs will get 'em.

Scene — A crowded bus. A young lady is vainly groping for her purse to pay her fare. A young man is standing nearby with anguish clearly written on his handsome features.

Young Man: "Pardon me, miss, but may I pay your fare?"

Young Lady: "Sir!"

Several seconds of groping.

Young Man: "I beg your pardon again, young lady, but won't you let me pay your fare?"

Young Lady: "Why, I don't even know you, and anyway I'll have this purse open in a minute."

Continued groping.

Young Man: "I really must insist on paying your fare. You've unbuttoned my suspenders three times."

The captain realized that there was no hope for the sinking boat, and said, "Is there any one among us who can pray?"

A meek man stepped forward: "Yes, sir; I can pray."

"Good," said the captain, "you start praying while the rest of us get lifebelts on. We're one short."

* * *

Co-ed: "When he dances he's all feet and when he stops he's all hands."

* * *

Slogan used in the chest X-ray campaign by the Winnipeg, Manitoba, health department: "Every chest or bust!"

If a woman looks old, she's young.
If a woman looks young, she's old.
If a woman looks back, chase her.

—*Iowa Agriculturist*

* * *

As she walked by she set my nerves on urge!

* * *

Running after women never hurt anybody—it's catching them that does the damage.

* * *

"I'm bored with marriage. Harry hasn't kissed me since my honeymoon."

"You ought to divorce him."

"I can't. Harry isn't my husband."

* * *

As the new barber nicked the one-armed stranger for the second time, he said, "You have been here before?"

"No," said the stranger sadly, "I lost this arm in a sawmill."

* * *

Russia points with pride to the fact that Russian women are doing men's work and are getting men's pay. That is nothing. Over here women get men's pay without doing any work.

* * *

A woman never really makes a fool of a man. She just directs the performance.

—*Cornell Countryman*

* * *

Gosh!!!

Mr. and Mrs. Mix are rejoicing over an 8 pound daughter, their sixth child since Saturday.

— *Brownsville Sentinel-Dispatch*

* * *

There was a little country girl who came to college and always went out with city fellers because farm hands were too rough.

* * *

All contributions to this page will be gratefully accepted. Please give or send them to your humor reporter.

Professor Freeman Jacoby

By Gene Sander '56

One of the smiling new faces seen around our campus this fall is that of professor Freeman Jacoby, the new head of our Poultry Department. Mr. Jacoby replaces Professor Raino K. Lanson who left our school to take a new position with the University of Maine.

Professor Jacoby was born in Bethlehem, Pennsylvania, which is only thirty miles north of our college campus. He spent his boyhood on the Buckwampum Farm, his father's homestead, which is located between Springtown and Bursonville, not too far from Bethlehem.

Mr. Jacoby attended Cornell University's School of Agriculture for four years. He was graduated from Cornell University with a Bachelor of Science Degree in Poultry Husbandry. Following graduation, Mr. Jacoby instructed Poultry Husbandry at K. S. A. C. for one year. Mr. Jacoby then joined the staff of Ohio S. C. as head of the Poultry Department. During his twelve-year stay at Ohio he took some graduate courses in General Marketing.

Upon leaving Ohio State College in 1923, Mr. Jacoby went into private business, operating chick hatcheries and cold storage plants in the Columbus, Ohio area. He also became a partner in a produce company near Circleville, Ohio. The professor took an influential part in the formation of the Columbus Vaccine Company, which supplied poultryment in that area with poultry biological products.

He operated and managed a few large poultry farms and helped to organize the first Egg and Poultry Cooperative in Ohio. Mr. Jacoby also helped to organize the Ohio Baby Chick Association, and served for five years as secretary of the Ohio Butter, Egg and Poultry Association.

Mr. Jacoby held positions in the United States Department of Agriculture at different times, in the Bureau of Chemistry and the Bureau of Agricultural Economics, which dealt with general marketing work.

Since 1947, Professor Jacoby has been Professor of General Marketing at Franklin University in Columbus, Ohio.

Mr. Jacoby has been on our campus only a short time, but he gives all indications that he likes it here. When asked his opinion of N. A. C., he stated that he likes the school, the surrounding area, and the friendliness of our student body and faculty. The first impression Mr. Jacoby received since he has been here was the close relationship between the students and the faculty.

He was also impressed by the location of our campus in the midst of a vast poultry industry in Bucks County. Declaring that this large industry is a source of practical knowledge for students to supplement the theoretical phases of the classroom, he states that this opportunity which the students interested in poultry have can not be found in larger schools around the country. He hopes to utilize this laboratory material in his courses.

We all hope that Mr. Jacoby will enjoy his stay here, and remain with us for many years to come.

The professor has been assigned to teach all the courses formerly taught by Professor Lanson.

THE PARROT'S CAGE

By L. B. and Parakeets

A new way to wash a bed had been found. Put it under the shower. Ask Sven all about it.

Flash!!! There are two laundrymen doing free washing in room 309 Ulman Hall—See Ben Pitman and Bud Ross. Bring your own soap.

Has anyone seen Fritts' dragon? It has been missing for three days. Catch it with a dragon-net.

Ringggg!!!!

"Hello, is Winkey Loesch there please?"

What fellow got in trouble with his girl's parents when he tried to "pin her" down in Bermuda this summer?—and we thought it was going so good too, Henry.

Who is the Sophomore who created quite a sensation by going out for football this semester?

What happened between Cap and LeVerne during the summer vacation???

Who put a skunk in one of the freshmen's rooms—and who transferred it to Charlie's bed?

Hey, Fred, have you seen anything of your mysterious night companion lately?

It has been rumored that we had a nomad living around the campus, portable bed and all.

Joe Kuhta and Art Force seem to have a monopoly on the phones around N.A.C. How about letting a few of the boys in on it, eh fellas?

We're all hoping for a red-head for your sake Don.

Congratulations on your engagement Jake. When are the bells going to ring?

Hey George, did you ever find that long lost blanket on Feather-bed Hill?

Still reading the Help Wanted ads, Fenner?

Anyone finding a few pairs of pants in the vicinity of Elson please contact Jack Mumma. Pretty cold out isn't it, Jake?

It has been heard around that Captain Moonface has changed his direction from Chalfont to Doylestown. Better service, Bub?

Anyone seeing anything of an extra bed around the campus contact Ira Jawetz. Springs too hard, Ira?

John Soards really played that Montclair game all the way to the hilt. We're all glad that you're back, John.

BOVINE MASTITIS

By Kurt J. Sonneborn '55

The term mastitis is used to indicate any inflamation of the mammary gland. It therefore differs from any other disease which is attributed to a specific pathologic condition brought about by a specific bacterial agent. This indicates that authorities as a whole have not yet found the specific cause for bovine mastitis. Essentially four schools of thought prevail at present, each one maintaining that the disease is due to one of the four following conditions:

(1) that all cases of mastitis are due to injuries.

(2) that injury or injurious management practices precede and are responsible for mastitis.

(3) that injuries are responsible for certain cases, either a virus or certain bacteria are secondary invaders and the agents responsible for most chronic conditions.

(4) that certain bacteria, especially Streptococcus agalactiae are so highly infectious that they are the primary invaders and the cause of most cases of acute mastitis.

With such serious disagreement as to the cause of mastitis, one general method for mastitis control can not be stated. Those who advocate the highly infectious theory stress sanitation as a means of controlling the spread of the organism. These include the segregation of animals shedding the responsible organism, or transferring infected animals to the end of the milking line. Others believe that good management practices which prevent injury to dairy cows is in itself sufficient to eliminate mastitis.

Experimental mastitis has been produced with a number of species belonging to the genus Streptococcus. Various strains of Blood Destroying Str. of human origin were found to cause mastitis when injected into the udder.

Immunity to Str. Agalactiae

Studies on immunity to this organism have not yielded any clear results as yet. Jones and Little found that innoculation of scarlet fever Str. into the cow's udder conferred some immunity to the other three quarters. This immunity was indicated by the milder course of infection upon the known infected quarters with the same strain of Str. Hadley did not find any evidence that one infection produced immunity against later attacks.

The study of bovine mastitis has produced a rather lengthy list of bacterial species found associated at some time or another with mastitis. These include: Str. agalactiae, Str. uberis, Str. disgalaceiae, and bacteriological work has indicated that one or all of these organisms are present in mastitic milk. Yet in laboratory cultures which have been carried on for some time the morphology of all these organisms had changed to such an extent that when these organisms were reinjected into the udder they failed to induce mastitis.

The causative mechanisms involved in bovine mastitis seem to depend on the activity of the infectious organism and upon the resistance of the host animal. Observations have indicated that the predominant forms of bacteria present in unincubated mastitic milk are diplococci, short chains and masses of individual cells with only a few long chains in evidence. However, after incubation of these milk samples long chain organisms became the most dominant morphological forms. Thus the morphological form of Str. agalactiae causing bovine mastitis differs considerably from the same organism after incubation. With continued incubation the individual members of the chain had a tendency to swell and frequently some of the members of the chain could only be seen as ghost cells.

These organisms, when grown on phosphate broth gave a characteristic precipitant reaction. However, when casein-acitate-lactose broth was used as a substitute, the organisms did not give the specific reaction. This may be due to the lack of substrates required for the development of antigenic characteristics. It can therefore be seen that the culture medium presents one of the major factors in the growth of these organisms in vitro.

The results obtained by injecting Str. agalactiae into the mammary glands indicates that the organism brings about the formation of components which are toxic to the mammary gland. The increased toxicity of diplococcus and short chain forms of Str. agalactiae when compared to long chain forms, indicate that morphological variations might be directly related to the severity of the disease; short chain organisms being more toxic than the long chain organisms.

The clinical symptoms of the disease are a decreased appetite, shivering, and a rise in body temperature, which rises in instances to 104 degrees for the period of twenty-four hours, but will abruptly fall; the cow having an elevated temperature for the duration of the disease.

The Str. agalactiae organisms causing mastitis may be different morphologically from those found in many laboratory cultures.

Str. agalactiae organisms produce or bring about the formation of components which induce swelling of the mammary glands. The enzymes affected are apparently those involved in the utilization of acetate by the mammary gland. Enzyme coagulation, secretion of red and white blood cells, and microorganisms which bring about a ropiness in the milk are a clear indication of mastitis. Maximum toxicity is associated with the diplococcus form, and short chain form of Str. agalactiae.

To guard himself against outbreaks of mastitis, the farmer should avail himself of special tests which can be easily carried out in any laboratory. These include determinations of the chloride and catalase content of milk, tests for the elimination of cellular debris through centrifuging, cultural tests for the presence of various microorganisms, as well as the addition of sodium hydroxide to the milk for the measurement of electrical conductivity. These tests, carried out periodically or upon the slightest indication of mastitis, will save the farmer many headaches, doctor bills, and above all, increase his income and the well being of the herd.

FILTH IN OUR FOODS

(continued from page 5)

pressed them back in place on the neatly piled pyramid. From what we had seen in this street during the night, Zaic and I could imagine in what these oranges had bathed. But we didn't want to rely on guesswork. A sample of the gutter contents went into flask five.

"Back at the Federal Food and Drug laboratory our samples were tested. Here are the results:

"Flask two (cuttings of the carrots) sidewalk where the carrots had been set) was found to contain two insect fragments and one weevil leg.

"Flask two (cuttings of the carrots) was found to contain one insect fragment, three rodent hairs, two sheep hairs, one human hair.

"Flask three (gutter water into which the green peppers had spilled) was found to contain one insect fragment.

"Flask four (cuttings of the peppers) was found to contain one sheep hair and one cat hair.

"Flask five (gutter fluid in which the peddler's oranges had fallen) was found to contain one aphid. It was also found to our disgust, if not surprise, positive for urea, indicating the presence of urine."

These quotations from Mr. Whitman's report show just how nauseating conditions are in the majority of markets (like conditions exist in Boston, Philadelphia, and other large cities). However not all markets are like those described. Cleveland's Northern Ohio Food Terminal and the Gansevoort Meat Market in New York are sanitary, efficient markets which handle perishable foods properly.

Thus far I have discussed the markets' shortcoming from the standpoint of cleanliness. Now let us look at the markets' failings from the standpoint of economy. Because the markets are antiquated, inefficient and much too crowded, the housewife is often forced to pay exorbitant prices for perishable foods.

Harold Dunbar Cooley, Congressman from North Carolina, stood up on the House of Representatives floor in September of 1951 and declared, "Fifty percent of the housewife's dollar in New York City is attached to the price of agricultural produce after it reaches the river in sight of the wholesale market."

The reason for this gross inefficiency is simple but inexcusable. There are no railroad sidings at the markets. At the railroad terminal (which is often several miles from the market) the food is unloaded. The wholesalers send trucks to reload the food and bring it to the market. Once more the food is unloaded. It is then bought, reloaded on trucks and sent to the stores. The markets don't even use conveyor belts to move the goods from train to truck and from one truck to another. Inefficient handling of food costs you money. You must pay for trucking the food from the railroad terminal to the market; you must pay for food which rots because of improper handling and poor sanitary conditions.

Why don't we get new produce markets? Why don't the wholesalers do something about the present markets?

Mr. Whitman writes, "A Philadelphia businessman testified before a Congressional committee that he was offered $40,000 if he would 'lay off' in his efforts to provide Philadelphia with a new produce market.

"Why? Who wants to block all efforts to eliminate the food slums of our cities?"

"In almost every city, there are vested interests which are profiting financially from the costly and antiquated marketing facilities of that city — perhaps even from the very wasteful operations which are increasing the cost of food to consumers. Congressman Harold Dunbar Cooley, of North Carolina, chairman of the House Committee of Agriculture, recently stated:

"What can you do personally to safeguard your interests? First, you can go down and inspect the market in your town. Our food slums have continued to exist because, like dirt swept under a carpet, they have been unseen. The markets operate at night and early dawn. They are in the ancient cores of cities. Our new generation of young Americans rarely sees them. Go see the market in your town. Think of how you like to keep your kitchen — and see if the kitchen of your city measures up."

"If it doesn't, there are several courses of action open.

1. Call out the city health department. In a single block of the food slums of many cities there are enough health violations to keep a health inspector busy for a week. I found that health departments in several cities have gone to sleep in regard to markets. Wake yours up.

2. Press your local city fathers to call in the United States Department of Ag-

(continued on next page)

CHEMOTHERAPY

By Marvin Adleman '55

Chemotherapy, the treatment of disease by chemical reagents that have a toxic effect on the responsible microorganism, offers the best answer yet to plant diseases that cannot be controlled by fungicides.

The usual solution to such difficult-to control diseases has been to use cultural practices that get around a particular disease or to breed resistant varieties that will not contract the disease. Both methods have their drawbacks. Cultural practices leave the grower unprotected if disease seeps through, and resistant varieties do not always maintain their resistance.

Chemotherapy, on the other hand, offers an opportunity both to render plants disease-resistant and to prevent the spread of disease if it does appear. A protective chemical is watered on the soil around plants or is sprayed on the foliage. By means of absorption, the chemical becomes distributed through all parts of the plant tissue.

The beneficial effects may come about in three ways. Some chemotherapeutants are systemic fungicides, as, for example, the antibiotics. They are translocated by the plant to the site of disease action and inhibit the disease. Others are toxin-inactivating drugs which poison specific enzymes responsible for causing disease symptoms. The third group of compounds alters the resistance of the plant so that it is less likely to contract a disease. The growth hormones fall into this category.

With this knowledge, plant scientists have been able to find controls for several deep-seated plant diseases that could not be touched by foliage fungicides. Chemotherapy has the added advantage of lessening the importance of complete spray coverage. With standard fungicides, all portions of the plant must be covered if the plant is to be protected. Since chemotherapeutants are absorbed and naturally distribute themselves throughout a plant, complete spray coverage is not necessary. Many plant diseases have already been brought under control by this action. These include red stele on strawberries, carnation wilt and various seedborn diseases.

FILTH IN OUR FOODS

(continued from previous page)

riculture. It has the funds and the experts to survey your market, tell you what's wrong with it, and show you how to put it right.

3. Get in touch with your representatives and your senators. Ask them how they stand on the Cooley Bill. If they are for it, tell him you'd like to see action. If they're against it, ask what alternate plan they have to stop the scandal of our food supply.

4. Bring the matter of our food slums out into the open. It has been swept under the carpet long enough. For the benefit of your family's health — and your pocketbook — make the cleanup of our market places a top priority project of any groups you belong to, men's business club, women's club, parents association, and church groups.

5. Tell your neighbors. If you have done the first job of a good citizen — if you have gone down to the market and seen for yourself — then do the second job. Yet your neighbors know. Their stake in family health and family budgets is just as great as yours. And when you've told your neighbors, tell the newspaper editor, the preacher, the judge, and the chamber of commerce. That's the American way.

PERSONALITIES OF THE FELINE FAMILY

(continued from page 10)

the Carnivora house we have in my opinion the real fighter of the cats, the tigers. Princeton is just two years old, weighs close to 600 pounds and is playful as a baby. He likes to take showers in the summer and gets angry when you turn the water off. If you think you can escape from a tiger by swimming, forget it. Tigers are excellent swimmers and on many hot days you can see Prince swimming around in his outdoor moat. Prince's favorite pastimes are playing hide and seek with the keepers. He tries to keep all 600 pounds hidden behind a bamboo shoot, and then springs happily into the air, thinking he surprised you. His other favorite pastime is trying to break into the female Sumatran tiger's cake. He picks at her door until his foot starts bleeding. He stops momentarily, whines, licks his paw, and then starts in again.

Some of these animals react to kindness and good care with affection and respect. Some of them don't and never will. Like human beings, they differ and react individually and must be treated accordingly.

MAN'S LAST CHANCE

(continued from page 6)

"What did you find out, Doctor?" he asks quickly.

"A pure case of shock and fatigue." is the answer, "I don't know where he has been for the past seven years but he is not responsible for anything he says."

The general sits down again and starts to write. "All right," he says without looking up, "make out your report and hand it in. That's all."

The doctor leaves the office and walks about halfway down the hall. He stops, looks up and down the hall. Seeing that no one is around but himself he turns and walks quietly *through the wall!*

THE RESEARCH LABORATORY

(continued from page 9)

the PH of the soil rises, and the concentration of phosphate is increased. This is the undesirable result! How this paradoxical situation can be overcome is the object of Dr. Elson's research.

A few years ago Dr. Schatz contributed to the solution of this very same problem in connection with the growth of bacteria, molds, and other small plants, (in other words the cultivation of micro-crops). Dr. Schatz, in collaboration with Dr. N. D. Cheronis, Chairman of the Chemistry Department of Brooklyn College, then expanded these laboratory studies with microscopic plants to field experimentation with corn. This work was done on the farm of Dr. Cheronis in Illinois. The findings were delightfully positive from the point of view of increased crop yields.

Dr. Elson is at present assuming research which will give an understanding of what happens in term of the physical chemistry of the soil when this new method of fertilization is employed. The method consists essentially of the use of so called chelating or sequestering agents. The function of these is to keep trace metals in a soluble form, and therefore available for crop utilization under conditions where soil has been limed, and an appreciable concentration of phosphate has been applied.

Another faculty member pursuing original research is Dr. Bowen, who spent part of the summer on the following problem. It was noticed that some plants are much more subject to fungus diseases than others. The lack of fungus growth on the more resistant plants seems due to the presence of certain chemical compounds. The object of Dr. Bowen's tests is to find out the nature of these compounds. He made three series of tests. The first series consisted of ten conifers, such as, Cedar of Lebanon, Scotch Pine, Blue Spruce etc. The needles were chopped up, and after the addition of glucose agar and sterilization, ten different plant pathogenic fungi were innoculated into one of the test tubes. It was found that the fungus with smallest amount of growth had taken place on the Cedar of Lebanon leaf solution. The second and third series consisted of ten deciduous plants and blossoms respectively. Mint showed the smallest amount of fungus growth in the second series. The next step will probably be a chemical analysis of the plants with the largest amount of fungus growth.

Mr. Segal was working on Tetrazolium compounds which were synthesized by Dr. Nicholas D. Cheronis. They are antimicrobial because they interfere with enzyme reaction in living cells. They vary in chemical structure. What Mr. Segal was interested in is to determine which particular structural modification in the fundamental Tetrazolium molecule will result in greatest antiomicrobial activity against various bacteria and molds. It is possible, should some of the Tetrazolium compounds be particularly active, that they might find use in the treatment of seeds to prevent deterioration by mold growth during storage, and in the treatment of diseases of ornamental trees etc.

The Laboratory is also studying the possibilities of a new antibiotic and is collaborating with other research groups on the study of hormones. Research concerning nutrition and cancer is also under way.

It is easily seen that far-reaching and important work is being undertaken at the Research Lab and that it is a valuable addition to our growing college.

* * *

Editor's Note: As this issue of the Gleaner is going to press, the research staff has acquired a new member. Watch for "An Interview With Uriel Schonbach" in the next Gleaner.

DESERVING HONORS

By Paul Lepard '57

In each issue of the Gleaner, there appears a story about a person closely connected with the college and students. This issue being no exception, the spotlight swings on Fredrick S. Blau.

Professor Blau is originally from Yonkers, New York. He attended Yonkers High School where he participated in sports on the swimming and track team.

After being graduated from high school, Professor Blau attended Farm School, where he majored in ornamental horticulture. He continued his education at Harvard University, majoring in landscape architecture, where he received his bachelor and master degrees.

Mr. Blau took charge of the estate and the retailing business of the Berryhill Nurseries.

About this time the war interrupted his career and he served four years in the Air Force. In 1942, he was an aerial photographer and topographer. In '43 and '44, he served overseas, spending a year in China, India and Burma. On his return to the U. S. he received a commission in the Signal Corps. His stay in the States was short, however, as Uncle Sam sent him overseas again—this time to France, Belgium, and Germany. When he returned home, he became the head of a school of photography for the Army in Louisiana.

After receiving his discharge from the Air Force, Professor Blau attended Harvard Graduate School. He did landscape design for public housing and also designed the landscaping for a public beach in Boston, Mass.

Professor Blau took charge of landscape architecture at N.A.C. in 1950, and has become a great asset to the college in many ways. Since he has been here, we have taken first prize each year in the Philadelphia Flower Shows.

Professor Blau leads a very busy life. Besides teaching at the college, he runs his own landscaping business in Doylestown. He is a member of the American Society of Landscape Architecture, American Painting and Civic Association, and National Conservation of State Parks. He enjoys photography, which is not only a hobby but also an essential part of his business.

He is also the father of two children, Seth, five years old, and Sarah Jane, two years old. Professor Blau lives in a contemporary home in Doylestown.

Since Mr. Blau has already achieved the success that most men dream of, we of the Gleaner wish him and his family many years of happiness.

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Let's Ask the Bible

Proverbs 13:7-8

One is as it were rich, when he hath nothing; and another is as it were poor, when he hath great riches. The ransom of a man's life are his riches; but he that is poor beareth not reprehension.

All who bargain for, and obtain, the emptiness of an existence devoted solely to its own selfish pleasures snatching only for each fleeting moment, have traded true life for perishable things and have forfeited the high regard of God. In the absence of these distractions and show of riches, there is left only bitterness and dissatisfaction. If we do not study, pray, and grow, and spend ourselves unselfishly for God and for others, we have neglected to build up a spiritual treasury which is infinitely more important to any man or woman than temporary success, popularity, or wealth could ever be. If we have riches of soul, we have a heavenly storehouse upon which we can draw forever.

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